

Turfgrass Disease Profiles



Leaf Rust

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Rust is a disease of taller mown turf. Outbreaks are most common on residential lawns and low budget athletic fields, but symptoms also may occur in professional landscape turf and golf course roughs. Rust is caused by a variety of related fungi (common names include leaf rust, crown rust, and stem rust) and occurs almost exclusively on Kentucky bluegrass and perennial ryegrass. The disease is largely cosmetic, although severe rust infection clearly weakens and thins the turf stand.



Figure 1

Disease Characteristics

From a distance, rust-infected turf has a yellow green cast (Figures 1 and 2). During early stages of disease development, symptoms occur in localized areas, especially in shaded sites. Outbreaks often first occur in shaded areas. Close inspection of rusted leaves reveals numerous yellow-orange pustules on leaf blades (Figure 3). Walking through grass with significant amounts of infection will disturb and release spores within the pustules and result in a distinct orange color on one's shoes (Figure 4).

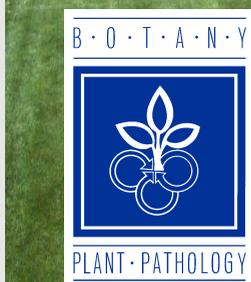


Figure 2

Rust outbreaks are most common in late summer and early fall, although sometimes the disease may be active in the early spring (especially on poorly nourished turf). It is a disease of slow growing turf. Therefore, factors that contribute to poor growth tend to favor rust development. These factors include summer heat and drought stress, low nitrogen fertility, compaction, and shade. Moderate temperatures (50° – 60°F) and long evening dew periods (greater than 10 hours) are required for rust outbreaks. The pathogen survives in the form of



Figure 3



Gray Snow Mold

Pink Snow Mold

Leaf Spot/Melting Out

Red Thread

Dollar Spot

Brown Patch

Gray Leaf Spot

Anthraxnose

Pythium Blight

Leaf Rust

Powdery Mildew

Slime Mold

Fairy Ring

Take All Patch

Summer Patch

Necrotic Ring Spot

weather-resilient structures in dormant turf and spreads by means of wind and splash-dispersed spores during the growing season.

Disease Control

Resistance to Disease

Some varieties of Kentucky bluegrass and perennial ryegrass are less susceptible to rust infection and sustain less damage. Varietal evaluations are available at the NTEP website <www.ntep.org>. However, differences probably will be negligible under conditions that are not favorable for disease development, i.e. where turf is healthy and given a moderate amount of care.

Cultural Control Options

Maintaining a healthy and vigorous stand of turf is the most effective and efficient method of rust control. Since slow growing turf in late summer is most vulnerable to outbreaks, small amounts (0.25 – 0.5 lb N per 1,000 sq ft) of nitrogen fertilizer in chronic trouble spots (shaded and possibly compacted areas) will contribute to disease control. The resumption of leaf growth and regular mowing will help the turf outgrow the relatively slow rust infection cycle. Avoiding irrigation during early evening hours will help limit disease spread by lessening the chance of extended dew periods.

Fungicides for Rust Control

A variety of effective fungicides are registered for rust control. These include DMI products (Banner maxx, Bayleton, Eagle, and Rubigan) as well as the strobilurin fungicides (now termed QoI fungicides) such as Heritage, Compass, Honor, and Insignia. These fungicides should be considered only for very high maintenance turf, where blemishes to the aesthetic appearance are unacceptable for even a few days (mostly high-budget sports turf).



Figure 4

Home Lawn Help

The cultural control options discussed above apply equally to residential lawns and professionally maintained Kentucky bluegrass and perennial ryegrass. This is a disease that can be managed with moderate attention given to the nitrogen fertility program. I do not recommend fungicides for rust control on residential lawns. If one is adamant about pursuing the chemical control option, I strongly recommend enlisting the services of a professional lawn care service for best results.